Calderbank 2000-0238

IN THE CLAIMS:

1. (Previously Presented) A method executed in a receiver that combines a decoder with an equalizer in a single module, comprising the steps of:

said receiver receiving at time k a signal $r(k)$;

selecting a trellis transition corresponding to symbol s that minimizes the metric

$$\xi_j(k) = \left| r(k) - \sum_{l=L_1+1}^{L_1} \tilde{h}_j(l)\tilde{s}(k-l) - \sum_{l=L_1+1}^{L+1} \tilde{h}_j(l)\hat{s}(k-l) \right|^2$$

where $\tilde{h}_j(l)$ is related to both the transmission channel and to the encoding structure in a transmitter, $\tilde{s}(k)$ is a trial symbol specified by a selected trellis transition and $\hat{s}(k)$ is a symbol that was previously decided; and

applying said symbol s to subsequent circuitry of said receiver.

2. (Previously Presented) The method of claim 1 where the were said selecting of a trellis transition is chosen to improve performance of equalization.

3. (Canceled).

4. (Canceled) .

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